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ABSTRACT

Although considered by most scholars as minor research, descriptive studies can make important contributions toward the development of simulation game research. Descriptive research studies are often simply case studies of the experiences of persons who have field tested, observed, or participated in a simulation game exercise. This kind of research contributes significantly as rich sources of testable hypotheses and potential explanatory variables. Secondly, descriptive studies may identify user problems that help avoid certain common errors in use, choice, or timing of simulation games. Thirdly, they may prove useful in identifying or devising new evaluation methods. Finally, since many descriptive studies are written by researchers in specific academic fields, they may identify common discipline problems, help to clarify requisite skills and devise educational outcomes, and raise questions about sequencing of activities within courses. (Author/DE)

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THE USE OF DESCRIPTIVE STUDIES IN SIMULATION GAME RESEARCH

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The purpose of this paper is to discuss the role of descriptive studies in simulation game research. Considered by most scholars as the "lowest level" of research (if it is in fact research), descriptive studies have occupied a rather modest place in the eyes of most researchers. Yet, as this paper attempts to demonstrate, descriptive studies can make very important contributions toward development of research questions, identification of explanative variables, and formulation of testable hypotheses.

DEFINITION OF DESCRIPTIVE STUDIES AND THEIR MAIN FUNCTION

Before discussing its various roles, it is necessary to define descriptive research. Fletcher describes the paradigm for descriptive research as follows:

> . . . someone puts together a simulation game, takes it out for a field test, observes the test, interviews the teachers, collects a fair amount of self-report data from the participants, and reports his findings in an organized way.[1]

Fletcher goes on to note the built in bias of the data collection methods as participants, usually unanimously, report favorably on their experiences with this particular activity.[2] Findings in descriptive studies are generally quite positive about simulation games.

Most often reported in anecdotal form, descriptive studies are many times simply case studies of the experiences of persons who participated in a simulation game exercise. Samples are limited, threats to internal and external validity are seldom met, and the "number of alternative hypotheses to explain the noted effects is virtually limitless."[3]

This generation of "limitless hypotheses" is perhaps the most important role of descriptive studies. While competing hypotheses may be of little help to a researcher trying to establish a causal relationship between specific simulation game attributes and a desired behavior, several hypotheses may be of great use in areas where little research has been done or where only limited possible explanative variables have been identified. It is as a source of varied experiences, identification of competing behaviors, and unanswered questions that the descriptive study has its greatest contribution. From these observed behaviors, however causal or unscientific, come relationships and patterns that yield potential hypotheses for further testing and refinement.

OTHER FUNCTIONS OF DESCRIPTIVE STUDIES

If descriptive studies yield testable hypotheses about player behavior, relationships between game type and player performance, and all the other possibilities, they will have been quite useful. However, limiting descriptive studies to such a role seems to miss a wide range of other possible uses. The remainder of this paper will be devoted to these peripheral uses that can and should arise from descriptive studies.

User Behavior

Current simulation game research has begun to focus on very fine details regarding simulation game construction. Researchers are beginning to discover that certain attitude changes of players may be related to specific game attributes or particular devices built into the activity itself. While these studies go far toward answering questions about choice of variables in game construction, they may overlook the equally important problem of when, from an educational standpoint, a simulation game can be used to greatest advantage in a class.

Boocock found, as an example, that many simulation games were too complex for classroom use without large amounts of pre-activity preparation. This was particularly true in social science courses where attempts were made to duplicate very complex social systems. While trying to accurately reflect a social system, designers made the activity so complex that its use, from a time consideration, could not be justified.[4] Bloomfield and Padelford, in their international simulations, found a similar problem in students not having adequate background to competently participate.[5] Boocock advocates, instead, the use of relatively short activities with more time for post-activity discussion and a structured follow-up procedure that encourages students to re-examine their game experiences as empirical data."[6]

Both simulation game users and researchers are plagued by this general problem of how to effectively use such an activity. If not properly prepared, students may miss the entire point of the exercise. If not introduced at the appropriate point in a course, simulation games may be simply interruptions with no reason for being. If not properly discussed afterward, even the best simulation games incorporating the latest technology will fail to achieve their greatest potential. There is a need to "develop principles for using simulations effectively."[7] Even without such research always available, the experiences of users (most often reported in descriptive studies) can be helpful both to the researcher, the current user, and the classroom teacher contemplating such use.

Evaluation

Beck and Monroe point out that one of the problems with simulation games is the difficulty of evaluating an innovative activity with traditional methods.[8] The problem is really two-fold. For the researcher, the difficulty

may lie in how to measure desired behavioral or attitudinal outcomes and relate them to simulation game attributes. For the simulation game user, the problem is which activity to choose and whether the desired educational goals have been reached at the conclusion of the activity.

Unlike explanatory and comparative research, descriptive studies usually are not attempts to replicate earlier research. For this reason, their evaluative techniques may be quite innovative and come outside conventional measures normally used. While they may not always prove useful, a review of these instruments and techniques may enable a researcher or user to devise his own evaluative scheme. Descriptive studies that are thoughtfully done and based on good observation or sound data collection can be an excellent source for evaluation techniques, as well as a source for other hypotheses related to simulation game research.[9]

Content-Oriented Studies

Descriptive studies about simulation games are often by persons not directly involved in learning research. These researchers may be, for example, trained in very narrowly defined areas in a specific academic field and become concerned about teaching students the information they felt was critical to the understanding of these specialized fields. Their experiences in game construction and usage may prove invaluable since these observations come from people not normally involved in simulation game research.

As an example, Cohen, in a descriptive study about an international simulation identified several problems that he felt had an effect on how well the game was able to proceed. A specific problem regarding "the very great difficulty of introducing realistic political weights into a political encounter" demonstrates a fundamental problem in political science.[10]

Yet this is a problem common to virtually every social science discipline--the unequal distribution of power in the real world (whether a nation or a family unit) and how this should be reflected in a simulation game.

Discipline oriented studies, as opposed to strictly designed explanative research projects, are usually concerned directly with the educational outcomes from an activity. Bloom and Padelford offer a good example from their descriptive analysis of some exercises at M.I.T. Emphasizing the importance of well conceived purposes preceding any simulation activity, they offer the following as one possible purpose:

> . . . to teach undergraduates, graduate students, or young teachers of international relations more about the dimensions of policy-making and decision-making and the diplomatic process than they can learn from books or lectures.[11]

Descriptive studies may provide similar kinds of desirable discipline goals that can be further operationalized and used in simulation game construction. With clearer goals and desired outcomes in mind, operationalizing evaluative procedures is also greatly enhanced. Persons directly involved in a given discipline or training field can provide helpful guides to both researchers and designers as they spell out the requisite skills to be learned or the desired behaviors in their respective fields.

Discipline studies may also offer insights about sequencing--that is, when a simulation game can be used for greatest impact within a course. Boocock believes that her particular urban sociology course works best focusing on four simulations.[12] Cleo Cherryholmes, in an early review of several simulations, indicated that several sequencing strategies may be useful. Different classroom uses, for example, may emphasize validation of the theory underlying a simulation, re-designing of a simulation, or creating a simulation.[13] Similar observations may offer additional clues for design and other testable questions about "sequencing" in individual disciplines.

SUMMARY

The undisputed value of descriptive studies is in their usefulness for generating hypotheses. Although each study is a compilation of data on a unique event or series of events, common themes and questions invariably begin to be evidenced as these studies are reviewed. It is from these data and observations that the researcher finds a rich resource of testable hypotheses and potential explanative variables.

While this role alone may well justify the continued use of descriptive studies, these studies can perform other important tasks. They may identify important user problems that help avoid certain common errors in use, choice, or timing of simulation games. Descriptive studies often prove useful in evaluation--either in devising new tools or identifying existing ones. Finally, descriptive studies may identify common discipline problems, help clarify requisite skills and devise educational outcomes, and raise questions about sequencing of activities within courses or courses of study.

FOOTNOTES

1. J.L. Fletcher, "The Effects of Two Elementary School Social Studies Games: An Experimental Field Study" (unpublished doctoral dissertation, Harvard University, 1968), p. 13.

2. Ibid., 15.

3. Everett T. Keach, Jr. and David A. Pierfy, "The Effects of a Simulation Game on Learning of Geographic Information at the Fifth Grade Level" (final report to U.S. Department of Health, Education, and Welfare, Athens, Georgia, September 30, 1972), p. 2.

4. Sarane S. Boocock, "Using Simulation Games in College Courses," Simulation and Games, 1 (1970), p. 67.

5. L.P. Bloomfield and N.J. Padelford, "Three Experiments in Political Gaming," American Political Science Review, 53 (December, 1959), p. 1115.

6. Boocock, p. 73.

7. Paul Twelker, "Some Reflections on Instructional Simulation and Gaming," Simulation and Games, 3 (June, 1972), p. 148.

8. I.H. Beck and B. Monroe, "Some Dimensions of Simulation," Educational Technology, 9 (October, 1969), p. 48.

9. see for example Greta Salem, "Simulations in Introductory Behavioral Science Courses." in Proceedings of the National Gaming Council's Eleventh Annual Symposium, compiled by Steven Kidder and Alyce Nafziger (Baltimore: Center for Social Organization of Schools, The Johns Hopkins University, 1972), pp. 200-205.

10. B.C. Cohen, "Political Gaming in the Classroom," Journal of Politics, 24 (May, 1962), p. 373.

11. Bloom and Padelford, p. 1111.

12. Boocock, p. 69.

13. Cleo Cherryholmes, "Developments in Simulation of International Relations for High School Teaching," Phi Delta Kappan, 46 (1965), p. 7.